

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2005/003609

**A. CLASSIFICATION OF SUBJECT MATTER***C10L 3/06(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC8 C10L 3/06, C01B 3/32, C07C 1/02, C10J 1/00, H05H 1/30

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 Korean Patents and applications for inventions since 1975  
 Korean Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 KR : IPC as above

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages           | Relevant to claim No. |
|-----------|--|-----------------------|
| A         | KR102004001283 A (Yasuchi Sekine) 11 February 2004<br>See abstract, p.1,5,6 and claims 1, 6  | 1,2,4,8,10,12         |
| A         | US6284157 B1 (Baldr Eliasson) 4 September 2001<br>See abstract, p.4, claims 1,8 and Figure 1 | 1,2,4                 |
| A         | EP1392087 A1 (BLACH VIZOSO) 25 February 2004<br>See abstract, p.6 and claim 1                | 1,2,4                 |
| A         | KR1019960009892 B1 (Park Sang Un) 24 July 1996<br>See abstract and claim 1                   | 1,4,5                 |

 Further documents are listed in the continuation of Box C. See patent family annex.

- \* Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed
- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

27 FEBRUARY 2006 (27.02.2006)

Date of mailing of the international search report

27 FEBRUARY 2006 (27.02.2006)

Name and mailing address of the ISA/KR



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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

PCT/KR2005/003609

| Patent document cited in search report | Publication date | Patent family member(s)   | Publication date   |
|--|------------------|---|--|
| KR1020040012835 A                      | 11.02.2004       | CA2447471AA<br>CA2447471A1<br>CN1509255A<br>EP01391421A1<br>EP1391421A1<br>IL158835A0 | 21.11.2002<br>21.11.2002<br>30.06.2004<br>25.02.2004<br>25.02.2004<br>12.05.2004 |
| US6284157 B1                           | 04.09.2001       | AU9701598A1<br>DE19757936B4<br>CA2256957AA<br>JP11240701A2                            | 15.07.1999<br>25.08.2005<br>27.06.1999<br>07.09.1999                             |
| EP01392087 A1                          | 25.02.2004       | EP1392087A1   | 25.02.2004   |
| KR1019960009892 B1                     | 24.07.1996       | NONE  |  |

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**Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)**

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material

- a sequence listing  
 table(s) related to the sequence listing

b. format of material

- on paper  
 in electronic form

c. time of filing/furnishing

- contained in the international application as filed  
 filed together with the international application in electronic form  
 furnished subsequently to this Authority for the purposes of search

2.  In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

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**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
  2.  Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
  3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:  
  4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
  - The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
  - No protest accompanied the payment of additional search fees.